

ATTENUATION OF TUMOR GROWTH, METASTASIS AND ANGIOGENESIS

Abstract

A highly purified and specific glycosaminoglycan degrading enzyme,
5 chondroitinase AC, and to a lesser extent, chondroitinase B, can be used in the
treatment of metastatic cancers and in other disorders characterized by
angiogenesis. The enzymatic removal of chondroitin sulfates A and C, and to a
lesser extent, chondroitin sulfate B, from cell surfaces directly decreases the
ability of tumor cells to invade blood vessels and thus prevents the formation of
10 metastatic, or secondary tumors; inhibits tumor cell growth ; and decreases
angiogenesis by inhibiting both endothelial cell proliferation and capillary
formation. Decreasing the formation of new blood vessels into the tumor in turn
decreases the potential for tumor growth, and further decreases the ability of
tumor cells to invade the bloodstream. These effects are opposite to the pro-
15 metastatic effects of tumor-secreted heparanase.